



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/784,895

02/24/2004

Marcel Mathijs Theodore Marie Dierichs

081468-0305313

1005

909

7590

02/09/2006

PILLSBURY WINTHROP SHAW PITTMAN, LLP
P.O. BOX 10500
MCLEAN, VA 22102

EXAMINER

FULLER, RODNEY EVAN

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/784,895

Applicant(s)

DIERICHs ET AL.

Examiner

Rodney E. Fuller

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10, 11, 21 and 22 is/are allowed.
- 6) ☒ Claim(s) 1 and 12 is/are rejected.
- 7) ☒ Claim(s) 2-9 and 13-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

RODNEY FULLER
PRIMARY EXAMINER

R-3

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/28/05.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Remarks

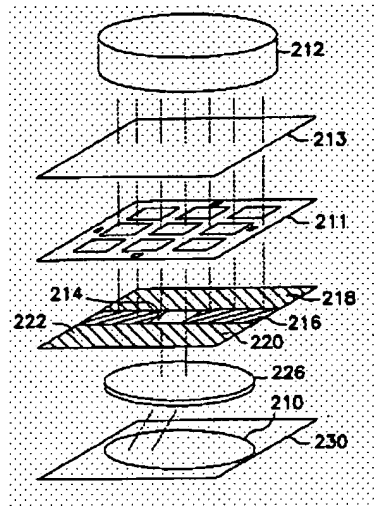
In response to applicant's Amendment, dated December 7, 2005, the examiner acknowledges the correction of the Objection to the Specification (i.e., Abstract) set forth in the Office Action mailed September 15, 2005.

In the Office Action mailed, September 15, 2005, the examiner indicated that the drawings filed on February 24, 2004 were accepted. After further review, the examiner sets forth a requirement of new corrected drawings (See below.)

Regarding the 35 U.S.C. 102(b) rejection of claims 1 and 12 as being anticipated by Pierrat (US 6,040,892), the applicant makes the argument that "as clearly shown in Figure 2 of Pierrat, the aperture blades 216, 218, 220 and 222 are clearly positioned in a plane prior to the projection optics 226 and the wafer 210. Therefore, the aperture blades are not in a first plane that is intermediate a second conjugate to a plane of the wafer 210 and a third plane conjugate to the pupil pane of the projection optics 226."

The examiner has considered the applicant's arguments and maintains the rejection. (See analysis below)

Art Unit: 2851



212 - Light Source

213 - Lens

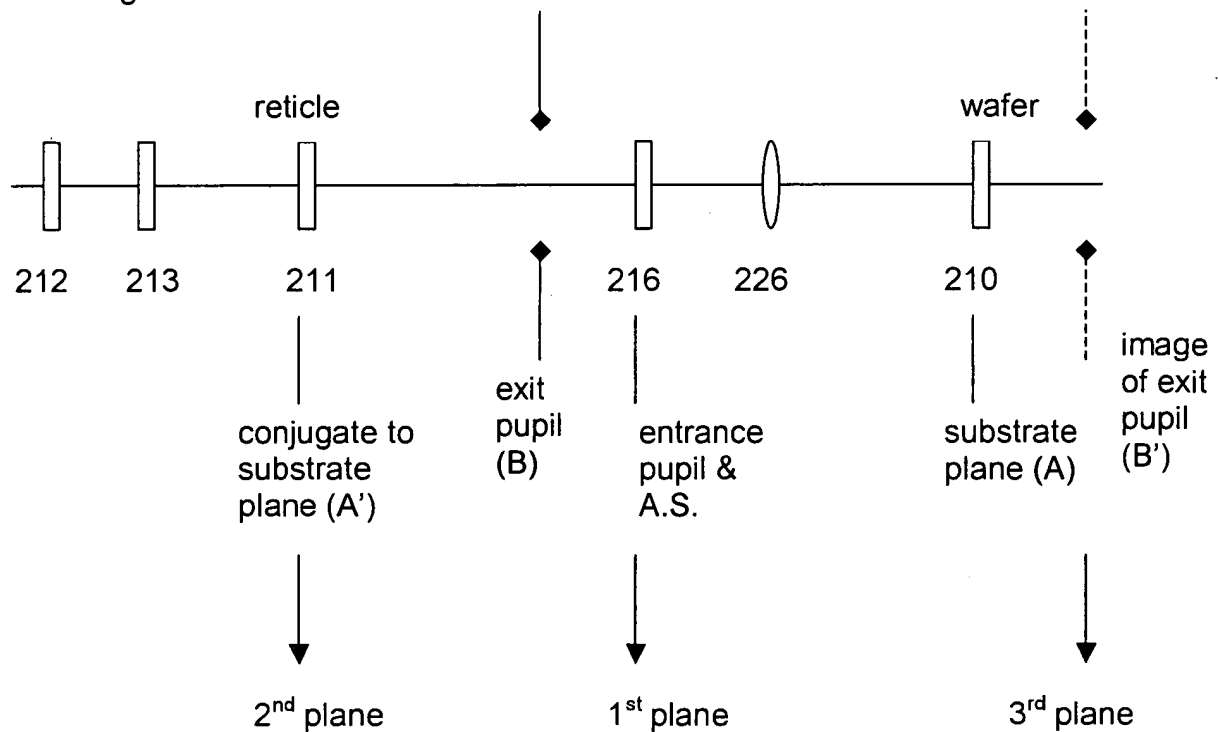
211 - Reticle

216-222 - Aperture Blades

226 - Lens (Projection Optics)

210 - Wafer

Pierrat - Figure 2



For proper imaging in any optical system, the reticle (211) is located at a conjugate plane to the wafer (210). Thus, the "2nd plane" is conjugate to a plane of the

Art Unit: 2851

substrate. Given that the aperture (216) is located before the lens (226), the aperture will act as the aperture stop and as the entrance pupil of the lens. Further, the exit pupil will be located to the left of the aperture. (See Hecht, Optics, p. 150) An image of the exit pupil utilizing the lens (226) would result an image located to the right of the lens. Therefore, a conjugate plane to a pupil plane of the projection system is located to the right of the aperture. Thus, the examiner maintains that Pierrat does disclose " a device positioned in a first plane intermediate a second plane conjugate to a plane of the substrate and a third plane conjugate to a pupil plane of the projection system."

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings are informal. Specifically, (1) many of the reference number labels are hand drawn, for example "IL" in Figure 1; (2) the labels "pupil line plane," "intermediate plane," and "field plane" in Figures 7A and 14A are of a small type font that will not likely print properly in any printed patent; and (3) several reference labels are unclear, for example "220" in Figure 11 and "IL" in Figure 13B. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Pierrat (US 6,040,892).

Regarding claims 1 and 12, Pierrat discloses "a radiation system configured to provide a beam of radiation, the radiation system including an illumination system (Fig. 2, ref.# 212; a support configured to support a patterning device (Fig. 2, ref.# 211), the patterning device configured to pattern the beam of radiation according to a desired pattern (column 3, lines 32-33); a substrate table (Fig. 2, ref.# 230) configured to hold a substrate (Fig. 2, ref.# 210); a projection system (Fig. 2, ref.# 226) configured to project the patterned beam of radiation onto a target portion of the substrate; and a device (Fig. 2, ref.# 214-222) positioned in a first plane intermediate a second plane (Fig. 2, ref.# 221) conjugate to a plane of the substrate (Fig. 2, ref.# 210) and a third plane conjugate to a pupil plane of the projection system (Fig. 2, ref.# 226), the device comprising a plurality blades (column 4, lines 49-50), each blade being selectively insertable into the beam of radiation."

Allowable Subject Matter

4. Claims 2-9 and 13-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. Claims 10-11 and 21-22 are allowed.
6. The following is an examiner's statement of reasons for allowance:

The prior art does not teach selectively inserting at least one reflective blade into the beam of radiation in front of at least one facet of at least one of the field faceted mirror and the pupil faceted mirror to reflect a portion of the beam of radiation to a beam dump.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

Art Unit: 2851

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney E. Fuller whose telephone number is 571-272-2118. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rodney E Fuller
Primary Examiner
Art Unit 2851



February 1, 2006